FEATURE

The Adirondack Park in the 21st Century

By ELIZABETH THORNDIKE

Abstract

Nine years ago a set of proposals and strategies for development of a long-range policy and research agenda for the Adirondack Park was published in AJES (Fall 1997; Spring 1998). As the Adirondack Research Consortium embarks on the next chapter of its evolution as an incorporated nonprofit 501c3 organization, it seems appropriate to revisit this proposed agenda and to suggest that it serve as a "white paper" for reaction and discussion among those interested in the role that research can play to inform policy, planning, and management of the public and private lands of the Adirondack Park.

Update

A number of the 1997 - 1998 proposals are being addressed, other issues have come to the foreground, and others that should be addressed have been dormant. Prominent among the proposals suggested was the establishment of an Adirondack research partnership. The evolution of the Adirondack Research Consortium into an incorporated nonprofit 501c3 organization is a significant step. Other positive steps, for just some examples, include the Adirondack All-Taxa Biological Inventory that seeks to assemble baseline data, development trend documentation produced by the Residents' Committee to Protect the Adirondacks, and building the capacity of communities as partners in these efforts is underway through the Conservation and Community program of the Wildlife Conservation Society (WCS). A recent WCS report, "Impacts to Wildlife from Low Density, Exurban Development," highlights the critical importance of private land for maintaining the biotic integrity of the landscape. Among its recommendations for research are identifying regions most vulnerable to development and implementing a comprehensive monitoring system.

Liz Thorndike, a commissioner of the Adirondack Park Agency from 1980 to 1995, is a Visiting Lecturer in the Department of City and Regional Planning, Cornell University and President-elect of the Adirondack Research Consortium.

Two priorities in the foreground

1. As others have noted, the environment is the economy of the Park. Accelerated consumption and fragmentation of wild lands are the two greatest threats to the integrity of the Park's environment. Over two million acres of private lands are held by about 500 owners. These large land holdings are key to the open space stewardship of the Park and the economic vitality of Park communities. The demand for their benefits and the pressures (often unwitting) to extinguish their values and services make imperative the study and understanding of incentives and other measures to promote long-term tenure for large holdings.

2. The Adirondack Park Agency Act, written in the early 1970s when understanding and application of holistic ecological concepts were in their infancy, judges the environmental impacts of development based on 37 separate criteria. Ecosystems, whole watershed planning, biodiversity, cumulative environmental impact (effects of many separate and seemingly negligible individual actions on the same resource), and carrying capacity of lakes, rivers, wetlands, forests and watersheds were not part of the 1973 Act's language or assessment process. In the 21st century, scientifically defensible, ecosystem-based adaptive management has become an achievable method for protecting ecological functions and services. The APA Act, DEC regulations, other state and county agencies, communities and private landowners will need to adopt this process if the Park's unique landscape and its human and natural communities are to be sustained amid the largest concentration of people on the North American continent

After-the-fact correction of problems that could have been avoided is not a cost-effective way to manage a region, a community, or a property. A carefully constructed and applied social science and natural science research agenda for the Adirondacks could contribute indispensable foresight capability for ongoing policy, planning, and management efforts to sustain the human and natural communities that are part of this unique resource--the major component of the Champlain-Adirondack Biosphere Reserve. Reprinting the following articles, Part I and II, is intended to stimulate that initiative.

PART I: PROPOSALS FOR A LONG-RANGE POLICY AND RESEARCH AGENDA

Introduction

Established by the NY State Legislature in 1892, with the public lands (Forest Preserve) protected by the "forever wild" clause of the NY State Constitution, the Adirondack Park is the world's longest experiment in conservation and development. The Park covers 20% of New York State, and encompasses six million acres of public and private lands, intermingled in a mosaic pattern of diverse ecosystems of forests, mountains, wetlands, lakes, rivers, streams, wildlife and humans.

Fifty-three percent of the Park's land and water is privately owned, mostly in large holdings of forest products industries, private sporting and recreation clubs and educational institutions; about 35% of the private land acreage (20% of the Park) is owned by year round residents. Forty-seven percent of the Park's land and water is publicly owned. Over one million acres, one-sixth of the entire Park and less than half of the public lands, are designated as Wilderness where non-motorized recreation, including hunting and fishing, may

be enjoyed. This wilderness resource constitutes 85% of the designated wilderness in the northeastern U.S. and the largest forested wilderness area east of the Rockies.

Home to the East's last great forested wilderness and to 130,000 year-round residents living in 105 towns and villages, the Park has long been both an inspiration and an arena in the struggle between retention of the features which have made it a biological treasure house and recreation Mecca and promotion of measures to insure economic vitality for its residents and communities.

Then, in 1990, the report of the Governor's Commission on the Adirondack Park in the 21st Century, which called for more stringent controls on private lands, was greeted with hostility and outright rebellion by many of the Park's residents. Since then, there have been attempts to develop greater areas of consensus about open space protection, local land-use planning and application of the Adirondack Park Agency's rules and regulations, to mention only a few of the many issues which prevail.

Imbedded in the Park's complex scheme of public and private property, rights and responsibilities, economic struggles, exceptional scenery and relatively pristine natural systems is the opportunity to develop a model for sustainability that balances human aspirations with nature's constraints. This is the challenge for the Adirondacks in the 21st century.

Assumptions

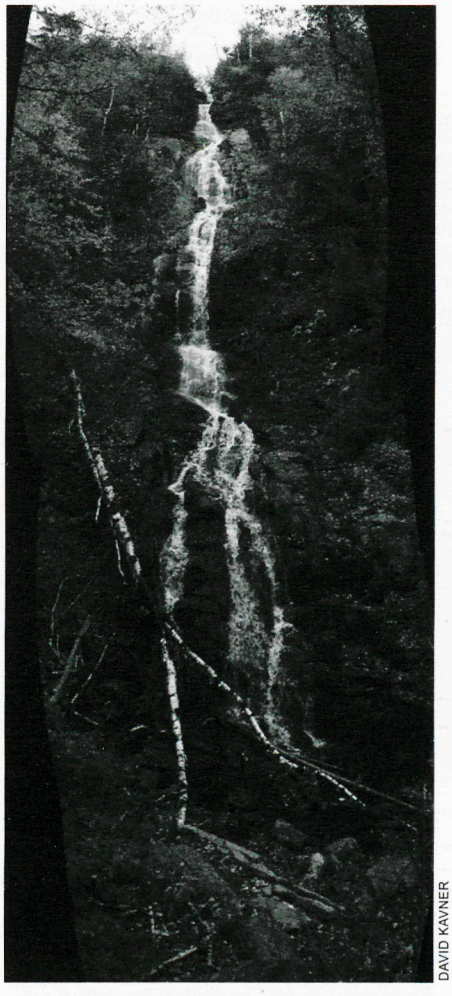
To stimulate ideas, commentary and dialogue about core elements of a long-range 21st century policy agenda for the Park, I begin by declaring several assumptions:

1. Change is inevitable; change in ecological systems, change in human institutions and change in human behavior. Whatever the time frame, change will occur and coping will be easier if we can operate from foresight rather than hindsight.

2. The environment and the economy of the Park are mutually interdependent and inextricably linked; the Park's ecosystems and natural resources are the bedrock of the economy of its communities. Economically viable communities can better afford to attend to the protection of their natural resources.

3. Collaborative, rather than adversarial processes, are more likely to result in joint gains for the environment and the economy; gridlock is costly to both.

4. A flexible approach is a better means of accomplishing objectives; regulatory programs need to be applied fairly and equitably, but with flexibility to accommodate highly varying circumstances in the Park.



DAVID KAVNER

5. State government does not have all the answers; the State's (i.e., the People of the State of New York) major interest in the Park is undeniable and reinforced by law and by history. But individuals, communities and private sector interests all have the means and the responsibility to make constructive contributions in the quest for solutions.

With these assumptions—or biases—now transparent, the following proposals for a long-range policy and research agenda are advanced within five categories.

The Future of the Park Lies in Private Hands

1. Assemble existing research and data on open space protection and lowered costs of municipal services. Design and conduct further studies to verify and confirm existing data.

While the largest single landholder in the Park is the People of the State of New York, the other separate landholders, numbering in the tens of thousands are individuals, companies or associations of one kind or another. No major proposal for the Park in modern times has ever called for the public lands of the Park to constitute more than about 50% of the area. It is unlikely, even with the Environmental Trust Fund and 1996 Bond Act moneys, that sufficient public assets will ever be secured to protect all sensitive natural resources or even to ensure retention of open spaces. These attributes make the Park unique amid the greatest concentration of people on the North American continent, and provide the anchor for the private enterprise economy of Park communities.

With private rights, which all Americans hold dear, come responsibilities to avoid actions which could adversely affect our neighbors, whether an individual, a family, or the 18 million "life tenants" who jointly own the public lands and waters of the Park. The initiatives of private landholders in concert with the Nature Conservancy, the Land Trust and the Open Space Institute will be critical in coming years, because private land protection can help conserve public values. The public benefits of tax-exempt open space are hard to see, unless they are tied in directly with a strongly desired environmental improvement, such as safe drinking water.

There will be an uphill battle whenever

easements or acquisitions are proposed until a greater array of convincing evidence shows local elected officials that unimproved land in rural communities not only generates benefits, but also requires fewer costly services, and therefore, less likelihood of future tax increases.

That evidence needs to be systematically uncovered, compiled and disseminated as part of an on-going research program. Studies to date, elsewhere, have confirmed the validity of this hypothesis. If further research validates these findings, the information can have impacts for other rural communities outside of the Park, where large tracts of open space are part of the working landscape of forestry, agriculture or recreation.

Comprehensive and Updated Scientific Foundations for Policy and Management Are Sorely Needed

2. Identify baseline data for Park resources.

Baseline data, such as that derived for the Adirondack Lakes Study to understand the dimensions of acidic deposition, need to be identified, organized and recorded for other resources and for other impacts.

3. Design, construct and reproduce an Adirondack map that delineates watershed boundaries of river and lake systems and superimposes existing town and county boundaries for use as an analytical tool to show development trends and impacts.

New development is continuously adding buildings and associated infrastructure to the Adirondack landscape at an estimated rate of 1,000 principal buildings per year. But that development is not uniform. Seventy-five percent of the development in the past 25 years has occurred in 25% of the towns and villages.

Knowledge of development trends within municipalities and counties is insufficient; it is important to assess development patterns in watersheds, which define ecological boundaries and impacts. An Adirondack map that delineates the Park by watershed boundaries, as well as political boundaries, would be a valuable analytical tool for pinpointing areas of ecological concern, identifying development trends in ecosystems or watersheds and adjusting policies to address them.

4. Design and conduct controlled experiments on ecosystem impacts of various land use and development actions.

An ecosystem management approach for protection of the Park's resources has broad consensus in the scientific community. The ecosystem concept explicitly includes people, acknowledges inseparable relationships, and limits to the carrying capacities for any particular environment in terms of number, size and distribution of individuals or species that can be supported under a given set of circumstances. Most important, natural resource systems cut across political boundaries and require collaborative efforts among adjacent communities to reduce or correct problems.

To enable an ecosystem approach we must have a far better understanding of how the Park's ecosystems function, as they are impacted by different kinds and aspects of development. Laws and regulations to protect the Park's environment have been drafted and enacted by lawyers and politicians, not scientists. Some of these laws may be unnecessarily rigid, others too weak.

The point is they are not tied directly to current knowledge about how Park ecosystems work or how severely they are impacted when, for example, surfaces are cleared or paved or more buildings added in a particular location. Under what set of conditions is clustering of buildings important? Under what conditions are large lots preferable? What effect do highways and other human-induced infrastructure changes have at particular locations within a watershed? How much are habitats altered and to what effect on future hunting, fishing and wildlife? Which pollutants cause the greatest damage as a result of particular kinds of land use and development practices? Only controlled, carefully designed experiments can provide the answers that should guide regulatory and policy decisions.

5. Design a process and inventory systematically the biodiversity of the Adirondack Park to create a baseline database.

Scientists know that biological diversity is important to the health of environmental systems. It is folly to destroy resources that may play a critical role in providing future benefits to the Park and its communities. Nevertheless, we have only a modest grasp of the nature of the Park's biodiversity. Incentives for landholders to work in partnership with scientists to inventory and describe flora and fauna should be devised, along with identification of funds to support such an effort. A coordinated Biodiversity Project could pay dividends for future generations and should tie into the gap analysis studies under way at academic institutions.

6. Conduct social science research to better understand the connections between perceived threats to life, liberty and property rights from a biodiversity inventory and identification project.

Major obstacles for such a project will be skepticism about motives and fears that finding an endangered or threatened species may result in excessive regulatory control over private property. Suspicion of such outcomes has been a barrier to undertaking surveys and analyses, so the first step should be a focus by social scientists on improved understanding of how to address this perceived threat.

7. Determine the biological, physical and social carrying capacity of specific ecosystems and develop a methodology to assess the cumulative environmental impacts of many separate actions on the same resource over time.

Degradation of water quality, of soil constituents and of the landscape in the Park will most likely occur by a thousand cuts, not as the result of one massive incident or development project. Cumulative environmental impacts, the effects of many

separate actions upon the same resource over time, represent the major class of unaddressed consequences of our current actions. Methodology for measuring cumulative impacts is still in its infancy. Better means of assessing cumulative impact and determining the biological, chemical and physical carrying capacity of a lake basin, a river corridor or forested ecosystem need to be developed, tested and applied.

8. Design and implement a systematic, on-going 'early warning' monitoring system to detect and mitigate environmental problems while they are small.

After-the-fact correction of environmental problems that could have been prevented is a costly way to manage a property, a town or a region. A systematic monitoring program that can detect environmental problems at an early stage needs to be designed and implemented throughout the Park. Such a program should enlist the private sector (academic research institutions and landowners) working with the responsible agencies to forestall adverse impacts and costly remedies.

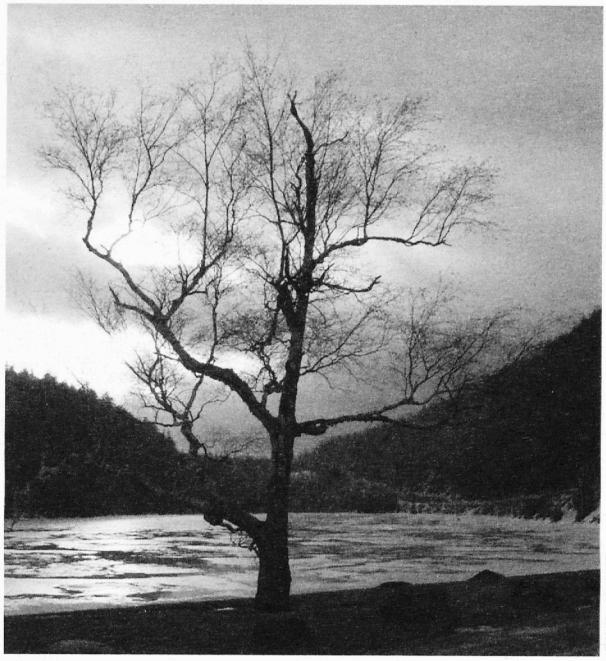
Empowering Park Communities Must Be a Major Focus

9. Devise incentives for multi-community collaborative efforts.

Local capacity building should include every opportunity for multi-community collaboration. Local government services and taxing authorities are generally associated with a single town or village. Town supervisors and town boards are elected to look out for the interests of their community. However, environmental impacts occur in the context of ecological boundaries that cut across political borders or lot lines. Multi-community collaboration around watersheds is already under way in other rural areas of the state. It has been made legally feasible by recent state legislation and promises to be both economically and environmentally sound as adjacent communities search for ways to share services and programs in order to cut costs.

10. Increase state aid for Adirondack community capacity building, particularly for multi-community collaboration and incentives for development where services and infrastructure can support it and where transfer of development rights would be feasible.

Adirondack communities share the same problems of rural communities everywhere. They have seemingly abundant natural resources and open space, development pressures from "outside," and the desire to improve their local tax base to support community services and schools. They also have fewer people to share the burdens of providing services and they lack the economy of scale that enables cities and their suburbs to avail themselves of an array of technical and professional expertise.



DAVID KAVNER

However, Adirondack communities also share a distinct difference from other rural communities. They are located within the boundaries of a century old Park with special state-imposed regional restrictions intended insure a sustainable future for the Park's resources and communities. It stands to reason that the state needs to provide an extra measure of support for Park communities to enable them to strive for standards of development and use of their lands and waters that will not destroy or impair the very natural and visual resources that are the foundations of their economies and of the Park's splendors.

Excellent strides have already been made in delineating "open space" and environmentally sensitive areas where development should be avoided or minimized. One way to encourage that path is to reinforce identification of places where development can occur. Design of multi-community comprehensive plans could also identify incentives to encourage development in those areas, as a way of holding down costs of municipal services and could address transfer of development rights as another means of cutting costs while protecting resources.

Techniques for Managing Conflict Should Be Institutionalized

11. Study and devise mechanisms for incorporating alternative dispute resolution tools and techniques into the regulatory apparatus of the environmental conservation law and the APA Act.

Conflict will be a continuing presence in the Adirondack scene. It will be necessary to adopt and apply new tools for environmental decision-making; alternative dispute resolution (mediation, negotiation, dialogue) focuses on the process of decision-making. Its use lags far behind the need for its application. Most state environmental laws do not provide for alternative dispute management once the regulatory machinery is in place. And most lawyers are more comfortable arguing their side within the framework of statutory and case law. We all have the capability to block each other's initiatives. But the resulting gridlock benefits neither the environment nor the economy.

The lack of alternatives to protracted litigation requires considerable investigation

if mediation or negotiation (negotiated rule-making aside) are to be incorporated into regulatory or public policy dispute management. The Bar Association Environmental Law Section could craft and draft legislation to incorporate formal mechanisms for allowing alternative techniques to settle disputes, by directing parties to undertake a variety of available strategies.

Such strategies should include means of involving the affected publics early and often in the decision-making process. By the time an agency makes a decision to hold a public hearing it is often because the issue has reached the level of major outcry.

It should be emphasized that conflict resolution is not a panacea for multi-party public policy disputes. Litigation will still be the remedy of choice for many issues. But all too often different interests resort to the court system because more effective means of addressing the problem are not available or permitted.

Broad Institutional Changes Need To Be Addressed

12. Examine the consolidation of state administrative agencies along the same set of regional boundaries and assess the pros and cons of phasing in a single state administrative area for the Adirondack Park.

New York State suffers from a badly fragmented management system for state agencies. Dividing the state into eight or so administrative regions, with a uniform set of county boundaries for all agencies with regional offices, would greatly improve the conduct and cost of public administration.

Because Park affairs are fragmented among agencies and agency administrative boundaries, there is no clear line of accountability or responsibility for actions that enhance or detract from optimum overall conservation protection, development, or use of the Park's resources. Visitors and observers of other international, national and state parks are always astonished to learn that there is no "director" of the Adirondack Park.

Never in its more than one hundred year history has the Park been treated as a Park in fact, as well as in name, by New York State. The obstacles in the way of overcoming the entrenched system are daunting but not insurmountable. Creating a single Park administration that incorporates environmental, economic and social concerns under its mantle would be an enduring legacy for the State's Executive.

Meanwhile, since there appears to be no obvious reason why state agency administrative boundaries are disconnected (presumably, they just grew that way), it would serve all the interests of the Adirondack Park if its administration were consolidated in a single region for each of the agencies that have responsibilities for regulations or services: environmental conservation, economic development, health, transportation. It matters less whether current additional North Country rural areas are also part of an agency's region, than that the Park as a whole be included within a single Agency administrative boundary. In particular, Park management by the Department of Environmental Conservation could be consolidated in phased steps under a single regional administrative framework to improve consistency in communication and application of management actions.

13. Create a task force of public and private sector representatives to take a hard look at user pays concepts and the actual costs and revenues to be incurred and derived from different applications.

With reduction in tax-supported services, it will become increasingly necessary to turn to "user pays" programs to insure sufficient staffing for user-expected Park services. These programs have become common for parks at all levels of government. There is no such thing as a free lunch, as any ecologist or economist will tell us.

It may seem abhorrent to pay to use public lands for walking, skiing or canoeing, but maintenance of trails, availability of ranger support, not to speak of the costs of building and maintaining the roads that enable recreational users to access the Park, all cost money. Thus, it is reasonable to expect that those who benefit directly to contribute to the incurred cost. The idea that people who "tread lightly and cleanly" have no discernible impact on natural resources has no basis in fact. Individually they do not, cumulatively they do.

Would fees keep people from coming to the Park? That is not very likely. The total costs of gas, tolls, food, lodging and special equipment far exceed the costs of one-day, weekend or annual in-state or out-of-state fees. The fee issue is controversial but a task force of public agency and private sector participants should investigate the socio-economic impacts of a fee system.

14. Create a task force and make specific recommendations for benefits and costs to New York State of changes in the estate tax and capital gains tax at the state and federal level as this pertains to protection of forests and agricultural lands.

A strong focus on implementing and facilitating non-regulatory means of protecting Park resources would advance the cause of consensus-building and sustainable development immeasurably. For example, the Northern Forest Lands Study, which included New York State's Adirondack Park and Tug Hill regions, made recommendations for reforms in tax policies at the federal and state levels that would benefit industrial and private landowners.

Easements are another non-regulatory means of protecting the Park's defining characteristic – its open space. Payment-in-lieu of taxes might be considered in some amount for lands that were formerly on the tax rolls, whether the easement is held by a public agency or private organization. Cncern about sufficient revenues to support municipal expenses is prevalent among local government officials everywhere. The property tax and sales tax are the principal sources of municipal revenues. Each new residential, commercial or industrial development adds to the tax base while also adding to the demands for

services and the impacts on natural resources.

15. Insure sufficient staff for the state agencies responsible for planning, management and regulation in the Park.

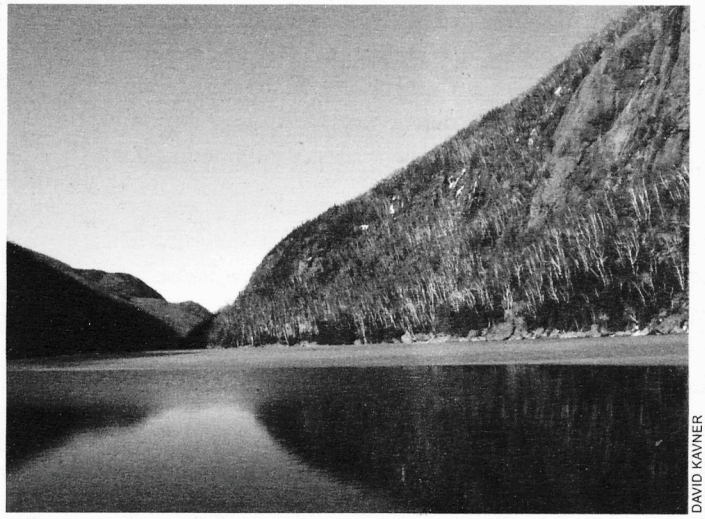
Sufficient staff at the APA, and the DEC regional offices is imperative if these agencies are to carry out their mandates. At the Adirondack Park Agency, for example, enforcement, project review and local government services are insufficient to meet the need or the demand. The most intensive outside evaluation of APA processes and products in 1994 recommended staff increases of about 10 persons to expedite project review, assist local government planning efforts, incorporate a modern computerized integrated geographic information/permit system and effectively enforce the APA private land use plan (there are three enforcement officers for the entire six million acre Park). Chronically insufficient staffing in the past has taken its toll on the State land in the Park as well. In the High Peaks region, there are too few rangers to monitor and assist the public users who have increased dramatically in the past decade and are severely damaging the resource.

16. Complete the regulatory reform process with the goal of expediting operations and simplifying procedures of the APA.

Adirondack Park policies governed by existing rules and regulations and legislative mandates are no longer on the cutting edge of conservation in this country. The aforementioned APA task force recommended revision of the Agency's rules and regulations, long overdue, but in need of a fair and inclusive process to tackle many contentious issues that have emerged over 25 years. Positive resolution of this regulatory reform process will be a strong measure of the ability of stakeholders to abide by the intent of the APA Act.

17. Increase funding for the various educational vehicles designed to insure an environmentally literate Park community in the coming years. These initiatives are the key to sustainability of the Park's resources and communities.

Regulatory and management programs for Park protection can go just so far in a democracy. Resources that exist to educate and inform the public include:



DAVID KAVNER

two Visitor Interpretive Centers, a regional museum, Adirondack Discovery Program, a research consortium, a research library, numerous conferences and extensive seasonal campground events. Collectively these programs attract only a fraction of the residents and the visitors estimated to come to the Park. Ultimately, support for these educational endeavors, at levels sufficient to reach a larger audience, will be critical to insure that future generations will still have a Park to cherish. Over the long run, education remains the key to Park protection.

PART II: IDEAS AND STRATEGIES FOR AN INSTITUTIONAL-STRUCTURAL FRAMEWORK

Introduction

In Part I proposals for a long-range policy and research agenda were advanced in order to stimulate ideas, commentary and dialogue. Part II is intended to do the same. It proposes a strategy for implementing a "research to inform" policy agenda through creation of a formal partnership of existing institutions and capabilities.

I take as a starting point the assumption that the Park's open space character and biological diversity must be preserved. This is so on ecological grounds and aesthetic grounds. It is also so on economic grounds. If the ecological integrity of the Park is not sustained and its vast open spaces become fragmented, the economic viability of Park communities can only be further eroded over time.

The linkages among the biological, economic and social benefits of the Adirondack Park's natural systems and ecological services and its open space need to be better understood and presented, if those who live, labor and recreate in the Park are to work effectively with state agencies and interest groups to protect the Park's human, cultural and natural resources.

Although a large body of scientific information about impacts of human activities on natural systems exists, very little research has been undertaken and applied to specific Park resources in specific locations as they may be impacted by different kinds of development.

Further, in regard to existing research, no entity is continuously providing scientifically defensible, peer-reviewed information to communities, organizations and the agencies charged with managing and regulating actions that impact the Park's resources. In the context of the Adirondacks, if appropriate people are unaware of a piece of research, or do not understand its implications, that research will have no impact.

Finally, improving foresight capability,

through research and monitoring, to prevent individuals, communities and New York taxpayers from being burdened with costly after-the-fact correction of problems that could have been avoided, is not a primary focus of any group concerned with the Adirondack Park.

Having made a case for the primacy of sustaining the Park's ecological integrity as the foundation of its economy, this paper identifies institutional partners, suggests a governing mechanism for working together, and summarizes some social, economic, and natural resource research priorities that should be pursued in a manner that informs policy.

An Adirondack Research Partnership

Any research partnership, if it is to respond to the needs of stakeholders (citizens of New York State, Park residents and landholders, visitors, public agencies, for example), requires a means of open dialogue among many perspectives. Whether the applied research is about socio-economic factors or behavior of natural systems as a consequence of land use and development, those proposing or planning to undertake research should do so in a real world context, solving real world problems and helping those who may be affected by the research to understand the results, the consequences and the application of the findings. This latter responsibility is rarely seen by researchers as part of their mission, but is critical if the research is to be useful.

A partnership created from existing capabilities could provide the working framework most likely to succeed. The Adirondack Park does not need a new institution or agency to address the research agenda suggested in Part I. It does need a coordinating mechanism for bringing together diverse existing capabilities, institutions and perspectives, identifying supporting resources and defining and acting on priorities. No single entity, whether New York State or a large university, has the capability to implement a "research to inform policy" agenda on its own.

Local and state government, special and public interest organizations and education groups, along with academic institutions, need to be represented in an effective partnership. The partners must acknowledge that they will constantly be engaged in a balancing act between human aspirations and nature's constraints, between demands of short-term pressures and inevitability of long-term natural processes.

The importance of having multiple decision-makers and stakeholders as participating members of the partnership cannot be emphasized too strongly. As problem solvers and "customers," they will request the research that is relevant to them, and, most important, they will be aware of, and pay attention to, the results of the research.

Specifically, who should be members of the partnership? The following list is meant to be illustrative, not conclusive.

Research and educational institutions should join in a partnership with other Park affiliated groups: special interest organizations such as Empire State Forest Products Association, Adirondack North Country Association, Adirondack Economic Development Corporation, and the Adirondack Landowners Association; also with public interest groups including the Adirondack Roundtable (an informal association of various environmental organizations) and the Residents' Committee to Protect the Adirondacks, with its in-Park grass roots constituency.

In addition, local governments should be represented through the Adirondack Park Local Government Review Board and the Association of Adirondack Towns and Villages. Six state agencies that have extensive responsibilities in the Park should also be represented — New York State Departments of Health, Transportation, Economic Development, Environmental Conservation, State and the Adirondack Park Agency.

Educational and land conservation groups that should be affiliated include the Adirondack Museum, the Adirondack Research Library, the Visitor Information Centers at Paul Smith's and Newcomb, Adirondack Discovery, the Adirondack Conservancy/Land Trust and the Open Space Institute.

Academic institutions would include those with major research capabilities relative to the Park, especially New York State supported research institutions: SUNY College of Environmental Science and Forestry with its expertise in forestry, environmental studies and landscape architecture and Cornell University with its institutes for water resources, resource information systems, waste management and programs in natural resources, ecology, agriculture, rural sociology, local government and regional planning. North country-centered colleges, Paul Smith's, St. Lawrence, North Country and Adirondack Community Colleges, Plattsburgh, Potsdam and Clarkson should be key members. Syracuse University, RPI, Dartmouth, Yale School of Forestry, University of Vermont and Duke are other institutions engaged in research that could add expertise to the partnership.

Structuring the Partnership

The research partnership will require 1) a means of insuring regular interaction between decision-makers, stakeholders and researchers and 2) resources to establish a competitive grants program.

The entire partnership could meet periodically at a location in the Park. These meetings would be designed to get feedback from the range of partners about priority needs for research, offer an opportunity for researchers to find out what stakeholders need to know, and provide a chance to share brief summaries of current research, including its application and implications.

The availability of competitive grant funds will be key to making the partnership functional. Requests for proposals should be based on consensus within the partnership about priorities for research. Research proposals could be reviewed in three categories — social science and eco-

nomics, natural sciences, and interdisciplinary research and education. Peer review panels should have expertise to judge the quality and substance of the proposals, as well as their priority for addressing needs of Adirondack decision-makers and stakeholders. Review panels could be drawn from partnership members and other affiliations.

The Great Lakes Research Fund could serve as a model for this process. In that case an endowment fund has been established by all the Great Lakes states. Another model is the New York State Energy Research and Development Authority, funded by an assessment on the state's utilities and matched with federal and private sector funds. Two to three million dollars annually would go a long way toward enabling needed research.

Projects involving collaboration between agencies, associations and qualified researchers should be strongly encouraged, so long as the research is designed objectively, and involves input from the stakeholders, but not control over the research methodology and outcomes.

Abstracts of recently awarded grants and synopses of current research findings could be included in the *Adirondack Journal of Environmental Studies* or a supplementary newsletter. Funds to support a secretariat to insure that dialogue occurs, to administer the grants program and to provide for communication costs such as a newsletter could come from a combination of dues assessed by the members and from grants.

Next Steps

As previously noted, the research program that is given priority should be decided upon by the Partnership. But a clear starting point can already be identified.

1. A literature review of research conducted in the Eastern U.S., regarding the above topics, should be undertaken.

2. A database on research specific to the Adirondack Park should be created, maintained and made accessible on the Internet.

3. The Adirondack Park Agency should be funded to create, in concert with the Adirondack Conservancy/Land Trust, a map of development trends within watershed boundaries and land use classifications, so as to provide an analytical tool for an ongoing monitoring program. Such a program would be a prelude to more extensive studies that track cumulative impacts of development and describe carrying capacities of specific watersheds.

4. A small group of North America's leading research scientists should be convened to make recommendations about the general scope and the resources needed for a research program specifically relevant to the Adirondack Park.

Concluding Remarks

At the beginning of the 20th century the Park was entering a period of recovery from the consequences wrought by indiscriminate cutting of the forests, excesses that threatened the state's commerce, dependent on consistent stream flow, but excesses also recognized as not in the long-term interests of the state's citizens.

As we approach the 21st century, the primary need remains long-term, sustainable efforts in private land stewardship, in natural and social science research and monitoring, in community capacity building for economic vitality, and through incremental steps toward institutional change, incorporating joint problem-solving and consensus-building into the process.

It has been estimated that half the residential development in the Park, many small projects, is not subject to APA jurisdiction. Just as scientists have learned that low doses of chemical substances and long time periods of exposure may be detrimental to human health, so also might we anticipate that inappropriate land use and development in small increments over time will harm the Park's natural systems upon which residents and visitors alike depend. Thus, local governments especially need sufficient resources and easy access to scientific and technical information in order to plan and monitor development in their communities and take appropriate early action to avoid adverse consequences.

Divisions of public and private lands in the Park are based on boundaries created by history and politics, not nature. The APA Act, which was largely based on existing land uses, will be of limited value in the future in channeling land use and development appropriately if its decisions and the decisions of landowners, small and large, are not informed by rigorously defensible scientific knowledge applied to specific on the ground, sub-regions of the Park. Using a laundry list of development considerations for a single project, as the present Act requires, is an outdated method of understanding the consequences of development in the context of other impacts to the same affected resources.

Ecosystem carrying capacity investigation, studies of watershed development effects, cumulative environmental impact measurement and biodiversity studies, in concert with socio-economic studies, should identify where and how future development can occur without causing undue adverse impact to natural processes and open space. The Park deserves no less. Future generations will applaud our foresight in undertaking and applying this research.

Acknowledgment

Thanks are owed to my colleagues among the commissioners and staff of the Adirondack Park Agency for insightful dialogue and tutoring over the years that I served as Chair of the Agency's Park Policy and Planning Committee. Major credit is also due to the hundreds of Park stakeholders with whom I have interacted since 1970, who have raised all the problems, the solutions, the ideas and the hopes embodied in this paper. I am also indebted to Ed Thorndike, research scientist, for his candid appraisal of the limitations of research as an influence on policies, while acknowledging that research has been a neglected tool for protecting Park resources.